



● **Board of Directors**
Engineering and Operations Committee

11/9/2021 Board Meeting

7-2

Subject

Award a \$1,477,000 contract to Minako America Corporation (dba Minco Construction) for replacement of ozone power supply units at the Joseph Jensen Water Treatment Plant and authorize an agreement with CDM Smith Inc. in an amount not to exceed \$800,000 for engineering services to support the Jensen ozone generation system rehabilitation; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Executive Summary

Ozone is used as the primary disinfectant at Metropolitan's five water treatment plants. Reliable operation of the ozonation system is essential for Metropolitan to meet drinking water regulations and address treatment challenges resulting from periodic water supply events. The existing ozone power supply units (PSUs) at the Joseph Jensen Water Treatment Plant (Jensen plant) have reached the end of their service life and need to be replaced. The procurement of the replacement PSUs was authorized through a board action in February 2020, and the units are scheduled for delivery in December 2021. This action awards a construction contract for installation of the new ozone PSUs at the Jensen plant, and authorizes a consulting agreement for engineering services to support the rehabilitation of the Jensen ozone generation system.

Details

Background

The Jensen plant was placed into service in 1972 with an initial capacity of 400 million gallons per day (mgd) and expanded to its current capacity of 750 mgd in the 1990s. Located in Granada Hills, the Jensen plant normally treats water from the West Branch of the State Water Project and delivers it to Metropolitan's Central Pool and to service areas on the west side of the distribution system.

Metropolitan employs ozone as the primary disinfectant at each of its water treatment plants to substantially reduce the formation of disinfection byproducts for compliance with the United States Environmental Protection Agency's Disinfectants and Disinfection Byproducts Rule. Ozone pre-disinfection also controls taste and odor-causing compounds and algal toxins. The ozonation process involves numerous equipment items and support systems, including high-voltage PSUs, ozone generators, cooling system, ozone destruct system, ozone contactors, programmable logic controllers, liquid oxygen system, and safety and water quality monitoring equipment.

The ozone generation system at the Jensen plant was originally placed into operation in 2005. Five ozone generators and five PSUs were originally installed to reliably treat up to 750 mgd. While the currently available ozone generation system components are suitable for operation in the short-term, the existing ozone PSUs and generator dielectrics have reached the end of their service life and require replacement to maintain the plant's long-term operational reliability. The original PSUs' electrical components are no longer manufactured or supported by the original equipment manufacturer, Suez Treatment Solutions, Inc. (formerly Ozonia North America). Further, new ozone PSUs will operate more efficiently than the older models and will no longer require chilled cooling water.

Staff is currently evaluating the benefits of reducing the maximum treatment capacity of the Jensen plant. As part of this assessment, staff has determined that only four ozone generators would be needed to accommodate the

reduced capacity scenarios that are currently being evaluated. In February 2020, Metropolitan's Board awarded a procurement contract for four PSUs and four sets of generator dielectrics to rehabilitate the ozone generation system at the Jensen plant. Manufacture of the equipment has been completed, and delivery is scheduled for December 2021.

Final design activities to replace the four ozone PSUs and perform required modifications to the associated electrical, control, and cooling water systems. This design work has been completed, and staff recommends moving forward with construction at this time.

Staff has initiated a second stage of this project to evaluate the physical condition and performance of the rest of the ozone subsystems, including oxygen feed gas, nitrogen, generator cooling water, and diffusion systems. This study will assess the capacity and reliability of Jensen's ozonation system and determine whether existing components can be refurbished or will need replacement for long-term operational reliability. To conduct this assessment, a consulting agreement for engineering services to support the rehabilitation of the Jensen ozone generation system is recommended at this time.

In accordance with the April 2020 action on the biennial budget for Fiscal Years 2020/21 and 2021/22, the General Manager will authorize staff to proceed with the actions described herein, pending board award of the construction contract and authorization of the engineering services agreement described below. Based on the current CIP expenditure forecast, funds for the work to be performed pursuant to the subject contracts during the current biennium are available within the Capital Investment Plan Appropriation for Fiscal Years 2020/21 and 2021/22 (Appropriation No. 15517). Funds required for work to be performed pursuant to the subject contract after Fiscal Year 2021/22 will be budgeted within the Capital Investment Plan Appropriation for Fiscal Years 2022/23 and 2023/24. This project has been reviewed in accordance with Metropolitan's CIP prioritization criteria and was approved by Metropolitan's CIP evaluation team to be included in the Treatment Plant Reliability Program.

Jensen Ozone PSUs Replacement – Construction

The scope of the construction contract includes sequential removal of five PSUs and installation of four new Metropolitan-furnished PSUs; installation of associated electrical power distribution equipment, instrumentation and control equipment, high-voltage cables, and communication components; and modifications of the cooling water system.

In addition to the above, Metropolitan forces will install dedicated fiber-optic signal wiring and conduit from the ozone master control panel to each PSU; modify the plant's Supervisory Control and Data Acquisition system; replace ozone generator dielectrics; provide field support for equipment start-up and testing, shutdown, and tie-in coordination; and salvage of PSU internal components. Finally, the PSU manufacturer, Suez Treatment Solutions, will perform start-up and testing and will provide field assistance during equipment installation under an existing procurement contract.

A total of \$3.98 million is required to perform the construction phase activities. In addition to the amount of the contract, other funds to be allocated include \$615,000 for construction inspection; \$670,000 for Metropolitan force activities described above; \$120,000 for submittals review and responding to requests for information; \$230,000 for technical support during construction and commissioning activities and preparation of record drawings by CDM Smith as discussed below; \$460,000 for contract administration, environmental monitoring, and project management; and \$408,000 for remaining budget.

In addition to the above, the allocated funds also include \$570,000 for a comprehensive assessment of the Jensen plant's ozone generation system by CDM Smith, as described below, and \$80,000 for needed support by Metropolitan staff to complete the ozone evaluation study. **Attachment 1** provides the allocation of required funds.

Award of Construction Contract (Minco Construction)

Specifications No. 2001 for the Jensen PSU Replacement project was advertised for bids on August 13, 2021. As shown in **Attachment 2**, one bid was received and opened on September 23, 2021. The bid from Minako America Corporation (dba Minco Construction) in the amount of \$1,477,000 complies with the requirements of the specifications. The engineer's estimate was \$2.16 million. Based on a survey conducted among prospective

bidders, staff concluded that other firms may have decided not to submit bids due to the region's current active construction market. Several prospective bidders indicated that their resources are committed to completing ongoing construction projects. For this contract, Metropolitan established a Small Business Enterprise participation level of at least 25 percent of the bid amount. Minco Construction is a certified SBE firm and thus achieves 100 percent SBE participation. The subcontractors for this contract are listed in **Attachment 3**.

This action awards a \$1,477,000 contract to Minako America Corporation (dba Minco Construction) to replace the ozone PSUs at the Jensen plant.

As described above, construction management and inspection will be performed by Metropolitan staff. The total cost of construction for this project is \$6.31 million, which includes \$4.16 million for the pre-purchased equipment, \$1,477,000 for the contract, and \$670,000 for Metropolitan forces, materials, and supplies. Engineering Services' performance metric target range for inspection of projects with construction greater than \$3 million is 9 to 12 percent. For this project, the performance metric goal for inspection is 9.8 percent of the total construction cost.

Engineering Services (CDM Smith Inc.) – New Agreement

CDM Smith conducted final design to replace the Jensen plant's ozone PSUs under an existing on-call agreement. As the engineer of record, CDM Smith is recommended to provide technical support during construction of the ozone PSU replacement and perform a comprehensive assessment of the ozone generation system at the Jensen plant. CDM Smith was prequalified through a competitive process via Request for Qualifications No. 1215, and the firm has extensive experience in evaluation and design of ozone generation systems, including design of the ozone facilities at the Skinner and Diemer plants.

Planned activities for CDM Smith during construction include reviewing submittals and field test data; responding to requests for information from the contractor; witnessing start-up testing and commissioning of equipment; and preparing record drawings. Other activities to support the rehabilitation of the Jensen ozone generation system include field investigation of physical condition and performance of the existing process and associated equipment, as well as technical workshops with plant staff; analysis of operational data; evaluation and recommendation of system improvements; and development of a technical memorandum.

This action authorizes an agreement with CDM Smith Inc. for a not-to-exceed amount of \$800,000 to provide engineering services to support Jensen ozone generation system rehabilitation. For this agreement, Metropolitan has established a Small Business Enterprise participation level of 25 percent. CDM Smith has agreed to meet this level of participation. The planned subconsultants for this agreement are Beyas & Patel, Inc., Process Applications, Inc., and TJC and Associates, Inc.

Alternatives Considered

During final design of the ozone PSU replacement, staff considered whether to utilize Metropolitan forces to replace the PSUs or hire a contractor to perform the work. The analysis concluded that specialized crews and operating equipment are required to handle high-voltage equipment, operate fire alarm and fire doors, and remove and reinstall the existing custom-designed steel window system at Jensen's ozone generation building. Metropolitan forces do not routinely perform this type of work. Consequently, staff recommends the use of a specialized contractor to replace the ozone PSUs at the Jensen plant.

Summary

This action awards a \$1,477,000 contract to Minako America Corporation (dba Minco Construction) for replacement of ozone PSUs at the Jensen plant, and authorize a new agreement with CDM Smith Inc. for a not-to-exceed amount of \$800,000 for engineering services to support the rehabilitation of Jensen's ozone generation system. See **Attachment 1** for the Allocation of Funds, **Attachment 2** for the Abstract of Bids, **Attachment 3** for the listing of Subcontractors, and **Attachment 4** for the Location Map.

Project Milestone

June 2023 – Completion of ozone PSU replacement at the Jensen plant

Policy

Metropolitan Water District Administrative Code Section 8121: General Authority of the General Manager to Enter Contracts

Metropolitan Water District Administrative Code Section 11104: Delegation of Responsibilities

By Minute Item 51895, dated February 11, 2020, the Board awarded a contract to procure power supply units and dielectrics for Jensen's ozone generation system.

By Minute Item 51963, dated April 14, 2020, the Board appropriated a total of \$500 million for projects identified in the Capital Investment Plan for Fiscal Years 2020/21 and 2021/22.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action involves operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use and no possibility of significantly impacting the physical environment. In addition, the proposed action includes the replacement and reconstruction of existing structures and facilities where the new structure will be located on the same site and as the structure replaced and will have the same purpose and capacity as the structure replaced. Accordingly, the proposed action qualifies under Class 1 and Class 2 Categorical Exemptions (Sections 15301 and 15302 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

- a. Award a \$1,477,000 contract to Minako America Corporation (dba Minco Construction) for replacement of ozone power supply units at the Jensen plant.
- b. Authorize an agreement with CDM Smith Inc. in the amount not to exceed \$800,000 for engineering services to support Jensen ozone generation system rehabilitation.

Fiscal Impact: Expenditure of \$4.63 million in capital funds. Approximately \$1.5 million will be incurred in the current biennium and have been previously authorized.

Business Analysis: This option will enhance the operational reliability of the ozone generation system at the Jensen plant.

Option #2

Do not proceed with the project at this time.

Fiscal Impact: Extended storage cost for pre-purchased equipment

Business Analysis: This option would forgo an opportunity to enhance the operational reliability of the Jensen plant. Ozone PSUs would be replaced individually as they fail. An extended outage of the ozone disinfection system could occur if multiple PSUs were to fail at the same time.

Staff Recommendation

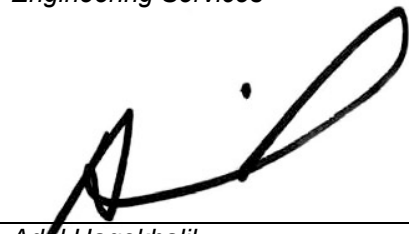
Option #1



John V. Bednarski
Manager/Chief Engineer
Engineering Services

10/13/2021

Date



Adel Hagekhalil
General Manager

10/26/2021

Date

Attachment 1 – Allocation of Funds

Attachment 2 – Abstract of Bids

Attachment 3 – Subcontractors for Low Bidder

Attachment 4 – Location of Map

Ref# es12680571

Allocation of Funds for Jensen Ozone Generation System Rehabilitation

	Current Board Action (Nov. 2021)
Labor	
Studies & Investigations	\$ 80,000
Final Design	-
Owner Costs (Program mgmt., envir. monitoring)	460,000
Submittals Review & Record Drwgs.	120,000
Construction Inspection & Support	615,000
Metropolitan Force Construction	650,000
Materials & Supplies	20,000
Incidental Expenses	-
Professional/Technical Services	-
CDM Smith	800,000
Right-of-Way	-
Equipment Use	-
Contracts	-
Minako America Corp. dba Minco Construction	1,477,000
Remaining Budget	408,000
Total	\$ 4,630,000

The total amount expended to date to rehabilitate the Jensen plant's ozone generation system is approximately \$5.9 million. The total estimated cost to complete the project, including the amount appropriated to date and funds allocated for the work described in this action is \$10.6 million.

The Metropolitan Water District of Southern California**Abstract of Bids Received on September 23, 2021, at 2:00 P.M.****Specifications No. 2001****Jensen Ozone Power Supply Units Replacement**

The work consists of removal of five ozone generator power supply units (PSU) and installation of four Metropolitan-furnished PSUs; and removal, modification, or installation of associated electrical power distribution and control system, instrumentation and control equipment, cooling water system, high voltage cables, control and communication modules.

Engineer's estimate: \$2,160,000

Bidder and Location	Total	SBE \$	SBE %	Met SBE¹
Minako America Corporation dba Minco Construction Gardena, CA	\$1,477,000	\$1,477,000	100%	Yes

¹ Small Business Enterprise (SBE) participation level established at 25% for this contract.

The Metropolitan Water District of Southern California**Subcontractors for Low Bidder****Specifications No. 2001****Jensen Ozone Power Supply Units Replacement**

Bidder's name: Minako America Corporation dba Minco Construction

Subcontractor and Location
Fire Pro, LLC Whittier, CA
Accessible Consulting Engineers Corona, CA
Rainbow Glazing, Inc. Fullerton, CA

Distribution System

